

IN THE CLAIMS:

The following is a listing of the presently pending claims.

1. (Previously Presented) A method, comprising:

ensuring continuity of a communication session when a user equipment hands over from a first communication network to a second communication network;
performing an authentication procedure for a packet data session with the second communication network while the user equipment is still connected to the first communication network; and
simultaneously performing a packet data protocol session establishment procedure with the second communication network while the user equipment still connected to the first communication network.

2. (Previously Presented) The method as claimed in claim 1, wherein the performing of the authentication procedure comprises authenticating the second communication network by the user equipment.

3. (Previously Presented) The method as claimed in claim 2, wherein the performing of the authentication procedure comprises authenticating the user equipment by the second communication network.

4. (Previously Presented) The method as claimed in claim 1, further comprising:
providing the first communication network comprising a wireless local area
network and the second communication network comprising a cellular network.

5. (Previously Presented) The method as claimed in claim 1, wherein the
performing of the authentication procedure comprises sending information by a user
equipment for authentication and packet data session establishment, wherein the
information travels either as a separate internet protocol package or is piggybacked with
existing signaling.

6. (Previously Presented) The method as claimed in claim 1, further comprising:
configuring a gateway node between the first communication network and the
second communication network to act as an access router for the first communication
network and to host the packet data session in the second communication network.

7. (Previously Presented) The method as claimed in claim 1, further comprising:
releasing a packet data session when a user equipment does not handover to the
second communication network within a predetermined time, thus requiring the user
equipment to repeat the authentication procedure when the user equipment is moving
towards the second communication network for a specified time.

8. (Previously Presented) The method as claimed in claim 1, further comprising:

sending by a user equipment a handover trigger indication to a gateway node in the second communication network, wherein the handover trigger indication comprises user equipment identification parameters and a packet data protocol profile;

sending by a gateway node the user equipment identification parameters and the packet data protocol profile to a serving node in the second communication network;

contacting by the serving node a home location register to obtain user equipment authentication parameters;

sending by the serving node a packet data protocol profile request to the gateway node;

responding by sending by the gateway node a packet data protocol profile response to the serving node;

sending by the serving node authentication information to the gateway node;

sending the gateway node the authentication information to the user equipment;

authenticating by the user equipment the second communication network; and

sending by the user equipment a response to the serving node and moving the user equipment into the second communication network.

9. (Previously Presented) The method as claimed in claim 1, further comprising:

sending by a user equipment a handover trigger indication to a gateway node in the second communication network;

sending by the gateway node a protocol data unit notification request to a serving node in the second communication network;

contacting by the serving node a home location register to obtain user equipment authentication parameters;

sending by the serving node a proxy authentication and a ciphering request to the gateway node;

converting by the gateway node authentication information in the ciphering request, which is then sent to the user equipment;

responding by the user equipment with an authentication message that is sent to the gateway node;

converting by the gateway node the authentication message from the user equipment and sending a proxy authentication and a ciphering response to the serving node;

sending by the serving node a protocol data unit notification response to the gateway node;

sending by the serving node a create packet data protocol request to the gateway node;

sending by the gateway node a create packet data protocol response to the serving node; and

replying by the gateway node to the handover trigger indication sent by the user equipment by sending a handover trigger response to the user equipment.

10. (Previously Presented) A method, comprising:

ensuring continuity of a communication session;

handing over by a user equipment from a first communication network to a second communication network; and

when the user equipment hands over from the first communication network to the second communication network, maintaining an attachment of the user equipment to the first communication network after the user equipment moves away from a coverage area of the first communication network for a predetermined time in order to allow the user equipment to return to the first communication network without having to repeat an authentication procedure and a packet data session establishment procedure before handing over to the second network.

11. (Previously Presented) The method as claimed in claim 10, further comprising:

releasing a packet data session when the user equipment does not handover to the second communication network within the predetermined time thus requiring the user equipment to repeat the authentication procedure when the user equipment is moving towards the second communication network for a specified time.

12. (Previously Presented) The method as claimed in claim 10, further comprising:

sending by the user equipment a handover trigger indication to a gateway node in the second communication network, wherein the handover trigger indication comprises user equipment identification parameters and a packet data protocol profile;

sending by a gateway node the user equipment identification parameters and the packet data protocol profile to a serving node in the second communication network;

contacting by the serving node a home location register to obtain user equipment authentication parameters;

sending by the serving node a packet data protocol profile request to the gateway node;

responding by sending by the gateway node a packet data protocol profile response to the serving node;

sending by the serving node authentication information to the gateway node;

sending the gateway node the authentication information to the user equipment;

authenticating by the user equipment the second communication network; and

sending by the user equipment a response to the serving node and moving the user equipment into the second communication network.

13. (Previously Presented) The method as claimed in claim 10, further comprising:

sending by the user equipment a handover trigger indication to a gateway node in the second communication network;

sending by the gateway node a protocol data unit notification request to a serving node in the second communication network;

contacting by the serving node a home location register to obtain user equipment authentication parameters;

sending by the serving node a proxy authentication and a ciphering request to the gateway node;

converting by the gateway node authentication information in the ciphering request, which is then sent to the user equipment;

responding by the user equipment with an authentication message that is sent to the gateway node;

converting by the gateway node the authentication message from the user equipment and sending a proxy authentication and a ciphering response to the serving node;

sending by the serving node a protocol data unit notification response to the gateway node;

sending by the serving node a create packet data protocol request to the gateway node;

sending by the gateway node a create packet data protocol response to the serving node; and

replying by the gateway node to the handover trigger indication sent by the user equipment by sending a handover trigger response to the user equipment.

14. (Previously Presented) A communication system, comprising:

- a user equipment;
- a first communication network; and
- a second cellular communication network, the system being configured to enable continuity of a communication session when a user equipment moves from a coverage area of the first communication network to a coverage area of a second cellular communication network, and to simultaneously perform an authentication procedure for a packet data session with the second cellular communication network and a packet data protocol session establishment procedure with the second cellular communication network, while the user equipment is still attached to the first communication network.

15. (Previously Presented) A communication system, comprising:

- ensuring means for ensuring continuity of a communication session when a user equipment hands over from a first communication network to a second cellular communication network;

first performing means for performing an authentication procedure for a packet data session with a second communication network while still being attached to a first communication network; and

second performing means for simultaneously performing a packet data protocol session establishment procedure with the second cellular communication network while still being attached to the first communication network.

16. (Previously Presented) A communication system, comprising:

an authentication unit configured to conduct an authentication procedure for a packet data session between a first and second communication networks when a user equipment hands off from the first communication network to the second communication network, the authentication procedure being conducted while the user equipment is still attached to a first communication network; and

an establishment unit configured to simultaneously perform a packet data protocol session establishment procedure with the second communication network while still being attached to the first communication network.